



March 1, 2000

**DESIGN MEMORANDUM No. 00-02
TECHNICAL ADVISORY**

TO: All Design, Operations, and District Personnel, and Consultants

FROM: /s/ Richard L. VanCleave
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SUBJECT: Guardrail End Treatment (GRET) Design and Contract Document Preparation Procedures

EFFECTIVE: September 12, 2000, Letting

I. INTRODUCTION

A crash involving a vehicle impacting the end of a roadside guardrail would have high severity potential since the vehicles and the occupants are usually stopped abruptly, incurring heavy damage and possibly severe injuries, respectively. Therefore a crashworthy guardrail end treatment is required.

II. DESIGN PROCEDURE

The policy related to the design and installation of new permanent guardrail end treatments will change as indicated in Design Memorandum No. 00-02 Policy Change.

III. CONTRACT DOCUMENT REQUIREMENTS

The pay item format for a new permanent guardrail end treatment is **Guardrail End Treatment, Type (OS, MS, I, or II)**. The guardrail end treatments will be measured and paid for per each unit.

Inclusion of a new permanent guardrail end treatment into a contract affects the contract documents as follows:

1. **Plans.** The location of guardrail end treatments and corresponding grading requirements must be shown on all plan and profile sheets and construction detail sheets, if applicable. This is necessary to inform the contractor where the guardrail end treatments included in the Schedule of Pay Items are to be installed. In addition, the location of guardrail transitions, WR-beam guardrail, and W-beam guardrail used to shield an errant motorist from obstructions must be shown on the appropriate sheets.
2. **Standard Drawings.** The designer must review all Standard Drawings pertaining to the guardrail end treatments to determine which drawings are to be included in the contract-specific standard drawings index.
3. **Specifications/Special Provisions.** The Supplemental Specifications, beginning with the edition effective September 1, 2000, have incorporated this concept change. Therefore, for typical situations, the Supplemental Specifications should be sufficient to permit the installation of new permanent guardrail end treatments. However, the specifications must be reviewed to verify that they are adequate to provide for the installation of all unique guardrail end treatments in the contract. If necessary, special provisions must be written to incorporate contract specific requirements for all unique guardrail end treatments.
4. **Schedule of Pay Items.** Guardrail end treatments will be measured and paid for per each unit. Guardrail transitions, standard W-beam guardrails and WR-beam guardrail used to shield the motorist from obstructions will be measured and paid for in accordance with the specification requirements for each shield component. The new pay items and code numbers are as follows: **601-06038 Guardrail End Treatment, II ... EACH; and 601-06728 Guardrail, WR-Beam ... m (LFT)**.

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